



CROSSTALK

News Bulletin of the TRW Amateur Radio Club

Member, American Radio Relay League

OCTOBER 1985

** FD'71 ** FD'73 ** FD'75 ** FD'76 ** WAS ** WAC **

Garrett/W6TRW Repeater: 145.32/-600(2A-PL) -- UHF: 442.000in/447.000out

CALENDAR FOR OCTOBER AND NOVEMBER

Saturday	Oct 26, 8-11am	Swapmeet NOTE: Sellers will not be permitted into the Seller's Lot until 7:00am! Corner of Aviation and Compton/Marine, behind the Chevron Station.
Tuesday	Oct 29, noon	Club Meeting, R4/1041. Speaker will be R. Dale Jensen, K6ZTI, who will talk about Emergency Communications, the TRW/ARC Emerg. Comm. Group and a presentation to Security
Tuesday	Nov 12, after work	Executive Board Meeting. All members are welcome! At Shakey's Manhattan Beach, 2000 N. Sepulveda Blvd., just south of Marine
Saturday	Nov 16, 6pm - 77	TRW/ARC ANNUAL DINNER , Del Conte's Restaurant. See details below. Big Door Prize!
Wednesday	Nov 26, noon	Club Meeting, R4/1041. Speaker will be Glenn Arakaki, KH6UR. Mr. Arakaki, a new member of the TRW/ARC, will present slides of DXpedition to Christmas Island.
Saturday	Nov 30, 8-11am	Swapmeet, Don't forget the new hours for sellers! Lot opens at 7:00am - no earlier!

TRW/ARC Annual Dinner - Saturday - November 16, 1985

This is the Second and **LAST** notice that you will get concerning the TRW/ARC Annual Dinner. We have good news! The TRW/ARC won the last prize from the HamCon and it will be the top Door Prize at the Dinner. It is a Kenwood Handheld, the top of the line TR-2600A! There will also be another \$150 of door prizes given out, for both the hams and the XYLs. Your money and choice of dinner must be in to Paul Herbert before Friday, Nov 9th. There is room for about 80 people in the King's Room so get your reservation in now. There will be a no host bar with a \$150 minimum so come thirsty! Wine with meal is included in that amount. See you there!

Where: Del Conte's Restaurant - The King's Room,
2900 Pacific Coast Hwy, Torrance,
North side of street between Hawthorne and
Crenshaw Blvds.

When: Saturday, November 16, 1985
6:00 PM "Happy Hour" No-Host Bar
7:00 PM Dinner Service

What: Your choice: (includes all the trimmings)
1) Baked Chicken
2) 10 oz Prime Rib

Who: Julian Macassey, N6ARE, World Famous
Toastmaster and Vice President of Operations
of AMSAT.

Cost: \$9.00 each for Club member and one guest.
\$14.00 for non-members and additional guests.
Price includes everything but alcoholic
beverages.

To make your reservation send your check for the appropriate amount to Paul Herbert, R1/2150, and include your choice of meals (Chicken or Prime Rib). Paul can be reached at (53)63404 if you need any info.

NEW MEMBERS - - OLD MEMBERS

Welcome to the Club:

Jeff (N6J1) and Sara (KC0HU) Stewart. This time the name got spelled right. Jeff is an Extra class operator and Sara has her Advanced ticket. Jeff is also a Life Member of the ARRL.

Scott Gilmartin, WD6BNR, an Advanced ticket holder and a ham of 9 years, also very interested in Packet Radio.

Glenn Arakaki, KH6UR, an Advanced class license holder and ham of 31 years! Be sure you catch Glenn's slide presentation on a DXpedition to Easter Island at the November Club meeting.

D. E. Martin, N6LLC, a recent addition to the ham ranks, holding a Technician class license for about a year.

Tom Athanasas, WA1ZQR, holder of an Advanced ticket and a ham for 9 years. Tom joined up just in time to enjoy the last Club Picnic for 1985.

Welcome aboard to all and hope to give you an eyeball QSO at the next meeting!

Dick Treece, K6RT, is calling it quits at TRW. Dick's last day is October 18th and his retirement luncheon was on the 15th. Dick has been around TRW long before it was TRW. If you want to hear some hair-raising stories, just ask him about the time they tried to see just how much power one of his custom mobile rigs could put out on HF, and they ended up arcing over the loading coil! Dick these days wants to get a linear built for 2 meters so he can talk to the islands (Hawaiian) on a regular basis. Last time I heard him mumble something about 2 KW! Enjoy the retirement, you deserve it!! And don't be a stranger, show up at a meeting now and then!



If you have ever wanted to experiment with satellites, NASA has got a deal for you. Beginning in 1989, experimenters will be given two year's free satellite transponder access to a geostationary satellite, Advanced Communications Technology Satellite (ACTS). NASA is soliciting proposals for "experimentation" on the ACTS "bird." The Public Service Satellite Consortium (PSSC) has been retained by NASA to seek experimenters in the public sector and assist them in the preparation of experimental proposals.

ACTS will be placed in a geosynchronous orbit, eliminating the need for automatic tracking, except on larger antennas. Earth station antennas expect to range from 2.5 to 4.5 meters in diameter, but the required size depends upon transmission parameters and/or the particular application.

Uplink frequencies will lie between 27.5 MHz and 30.0 MHz. The satellite payload will translate them to the 17.7 MHz to 20.2 MHz range and retransmit them to earth. Spot beams on the satellite will be used to illuminate certain population centers, generally. Limited transmitter power is available, so broad coverage of the United States is not planned.

What type of communications mode will be used? Not known, this will depend upon the need of the experimenter. ACTS is designed around the switched-satellite-time division multiple-access (SS-TDMA) concept, that is, it is kind of packet-switching with the switch located in the sky. So, more likely than not, specific digitally modulated signals will be required, however, a portion of the payload is a simple repeater which might allow point-to-point links using FM or other analog modulation techniques.

There are two concept applications that NASA has in mind for potential users. First, amateurs can propose to build their own earth stations and test them directly on ACTS. Of course, you must be located in a spot beam of the transponder. In this instance, more than ample bandwidth is available for voice, data, slow-scan tv, etc. Second, amateurs who are located outside of a spot beam may attempt to access ACTS by using amateur band repeaters to reach an ACTS earth station. This is called the shared-access concept, since the earth station may be owned by a commercial experimenter who is willing to share some of the capacity.

If you are interested, you must submit an "expression of intent" to conduct an experiment and a preliminary description of the experiment. You might propose study of the following: earth station evaluation, transmission impairments, rain attenuation compensation, acquisition, tracking and synchronization, propagation and applications. For more information, contact NASA and request the formal "notice of intent" along with the introductory brochure from Ron Schertler, ACTS Project Experiments Manager. Include a cover letter and a brief description of the proposed experiment. Provide the name of a principle contact, mailing address and phone number, method of funding (satellite time is free during the experimental two year period), earth station location(s), and the measurements expected to be documented. Formal proposals must be sent to Daniel Brandel. NASA will respond to each experimenter, review the proposals and notify all of accepted experiments. Address are as follows:

Ron Schertler
ACTS Project Experiments Manager
NASA, MS-54-6
21000 Brookpark Road
Cleveland, Ohio 44135
(216) 433-4000 Ext. 792

Daniel Brandel
ACTS Program Manager
NASA, Code EC-4
Washington, D.C. 20456

No official minutes of the meeting were taken as the Secretary was not present. The speaker at the meeting was W.E. Buchanan, KF6TE, Director of Expansion for the Western Region for the Independent Space Research Group, Inc. located in Troy, New York. Mr. Buchanan spoke about the Amateur Space Telescope Project. The Space Telescope will include an 18 inch Ritchey-Chretien Cassegrain telescope, two solid state TV cameras, a small spectrograph and the usual control and communications equipment. The space telescope is expected to be launched from the Space Shuttle. Mr. Buchanan had handouts on the Space Telescope as well as a bibliography of articles on receiving pictures from satellites. Thirteen attendees signed the attendance sheet.

Ideas On the Origin of 73

Katashi Nose, KH6IJ

(ed. The following article appeared in the Aug 8, 1985 edition of the Honolulu Star-Bulletin, and got to us from the Citrus Belt ARC Newsletter, The Modulator, where it was submitted by Nick, N6HEM.)

The Summer 1985 NCVA Cryptolog carries an item regarding the origin of "73" as follows:

"Back in 1909 ... if a man were to survive in the old West, it was said he needed three things: a good horse, a good wife and a Winchester 73.

"The Winchester 73 was a lever action, highly accurate rifle. So, in wishing a man '73' you wished him the best! (From Spark Gap Times)"

Robert Jones, KH6O, has done some research during his tour (1961-1964) at MSGA headquarters in Washington, D.C., and has come up with the following on the origin of "73":

"My first interesting discovery was that the original Morse Code had been a cumbersome all-number affair that required the use of a dictionary at each end of the circuit for decoding the text. This system was developed in 1835.

"Here, I thought, was the true origin of '73'; perhaps 'Best Regards' had been one of Morse's number equivalents. Diligent searching yielded nothing; only a few scattered sample messages in Morse's number system were found in books of that era.

"Copies of the number dictionary were not in any of the collections searched. The Morse collection at the Library of Congress contained references to the dictionary (described as being made up of seven pages, each page 2 feet by 2 feet, 10 inches) but no copies of the dictionary itself.

"Mr. Elliott Sivovich, K3RJA, of the Smithsonian staff told me that many valuable documents had been destroyed in a fire at the Library of Congress in 1851. The Morse dictionary may have been lost then.

"Morse abandoned the number/dictionary system in 1838 and compiled the dot, dash, space alphabet that was the forerunner of our current International Morse Code.

"When the famous 'What Hath God Wrought' telegraph circuit was set up in 1844 between Washington, D.C., and Baltimore, Morse and his assistant compiled a list of number and letter abbreviations to save circuit time.

"There is no record of '73' being used on the circuit. The earliest reference I could find was in Telegraph Companion by Shaffner published in 1855. A table of 28 number abbreviations used on the New Orleans to St. Louis telegraph line included '73' (Best Regards).

"In 1859, Western Union, the growing giant that was absorbing all the smaller telegraph companies, formalized the number abbreviations with the '92' code; a set of numbers from 1 to 92 that contained abbreviations for use by telegraphers.

"The only numbers of the '92' code extant are 30, 73 and 88. We all know the meaning of 73 and 88; 30 is still with us as VA or SK..."

Attending were; Jim Cox, Bill Daley, Bill Dews, Paul Herbert, Bob Hume, Dale Jensen, John Keller, Walt Pearson, Dave Stockwell, Chris Wachs and Jim Wike. resident Walt Pearson opened the meeting and reminded the Executive Board and Staff members that elections are coming up in the near future and that several offices need to be filled. A few prospective candidates have been contacted but the position of Vice-President remains without a candidate. Walt reported that the speaker for the next meeting would be Dale Jensen, K6ZTI, and that he would speak on emergency communications and on a presentation to TRW Security. The minutes of the last EBM were accepted as printed in the Crosstalk. Treasurer Paul Herbert reported that the TRW/ARC received the \$500 return on the \$250 investment the Club made on the Queen Mary HamCon. Paul further reported that the TRW/ARC won the one remaining door prize from the HamCon, a Kenwood TR-2600A Two Meter Handheld Transceiver. The transceiver will be used as the top door prize at the Annual Dinner on November 16th. Paul noted that 35 reservations have been made for the Banquet. All money must be in to Paul by Friday Nov 8th. Banquet Chairman Chris Wachs reported that all arrangements for the banquet have been finalized and it will be held at Del Conte's Restaurant in the King's Room (80 persons max), 2900 Pacific Coast Hwy, Torrance. A discussion was held as to how door prizes should be handled. The board agreed that fewer, more expensive gifts, with some for the hams and some for the XYLs would be better than less expensive gifts with something for everyone. The final decision was left up to Chris. Activities Chairman Jim Wike reported that 5 great picnics and one St Patrick's Day celebration were held in the past year and all done within budget. Jim said that he wouldn't have been able to do it if it wasn't for the able assistance of his wife Luella. Trustee Bob Hume suggested that some of the extra funds realized from the Swapmeet be used to purchase guy wires and crows for the new tower installation. Due to the expense, it was decided that we would wait until the end of the year to act on that idea. Bob reported that the 40 Meter Quad antenna is up and operating with a decided preference for the phone bands. SWR goes up to 3:1 down in the CW portion of the band. Bob wants to make up some switching boxes for the 40 Meter Quad so that the pattern can be switched from east to west. Emergency Communications Coordinator Dale Jensen reported that he will be making a presentation to Security on Amateur operations during an emergency incident. LAACARC Representative Bill Daley reported that the next meeting of the LAACARC will be in November and that he would have more to report after that meeting. Membership Chairman Bill Dews reported that the Club now has 169 members. This is an increase over the number we had this time last year. A discussion followed concerning Bill's request that the Club purchase a portable generator. Dale mentioned that we must be sure that the generator we get is rated for continuous duty. Bill Dews reported for Swapmeet Chairman Frank Cartier that the hours for the October Swapmeet, and all following Swapmeets, will be from 7:00 to 11:30am. Thus, the seller's lot will open one hour later but remain open an additional 1/2 hour. Official hours for buyers will still be 8:00 to 11:00am. Frank may not be able to make the December Swapmeet and was looking for someone to take over his duties that one month only. Frank was also in need of tickets for the Swapmeet raffle. Jim Wike stated that he had the roll of tickets for the door prizes and would get some to Frank. Jim also mentioned that he has noticed some commercial dealers and computer types working their way back into the Swapmeet and suggested that the problem be dealt with very soon. Technical Chairman Jim Cox reported he has received the good transistor for the exciter board for the W6TRW repeater and it has been installed. However, the board is out of adjustment and will not operate. He requested the power meter from Bill Dews. Jim agreed

...more EBM Minutes...

that the W6NWP location has problems and he emphasized that some of the problems come from the installation location which is so cramped that it is impossible to work on the repeater at the site. As soon as the W6TRW exciter board is repaired and functional Jim will put the repeaters in their original configuration and install the W6TRW machine in Bldg E2 so that we can find the source of the interfering signal. Operations during the TRW Family Day were discussed. All those that attended said that they had a good time and a lot of people were interested in Amateur Radio due to the recent earthquake in Mexico City. The meeting was adjourned at 7:10pm.

September Swapmeet Notes

Frank Cartier, W6GRAY

The September Swapmeet was another well attended event. When I arrived at 0545 the sellers lot was totally empty with about 20 vehicles orderly lined up at the entrance. Thanks to all participants for observing the rules so well. We had three volunteer supervisors this month, Darwin Salisbury, K6IGU, Ed Farnsworth, W6TEC, and my son Frank who is currently enrolled in the Murphy Radio School novice and general class. Three of us had HTs operating simplex so we had excellent communications between the supervisors. Thanks to Darwin, Ed, and Frank for a very fine job.

Again the large turnout was a very well behaved and cooperative group. We continue to have a minor problem with trash left in the sellers lot, however, the situation was an improvement over last month. Please be considerate and clean up your area before departure. If the parking lot is left with a large mess we can lose our permission to use it. We did not have anyone leaving "boat anchors" behind this month as we did last month, so that situation has improved as well.

We have a very important rule change that will be in effect starting with the October Swapmeet. From now on the sellers lot will not be open until 0700 and our new closing time will be 1130, an extension of one-half hour. This change in the rules will allow adequate daylight prior to the start of the Swapmeet and will be helpful to those people who travel a long distance to attend. We passed out announcements concerning these new operating hours at the September Swapmeet and we received a lot of positive compliments from the participants. Please spread the word around - beginning in October NO-ONE will be allowed into the seller's lot until 0700.

Volunteer Swapmeet Supervisors for the October Swapmeet are:

Mike Aust, WB6DJI

Dale Mooney, WA6DLA

Once again I would appreciate all TRW/ARC members attending the Swapmeet to observe that the rules of the Swapmeet are being observed by the sellers. If you see a violation or something that you feel is suspicious, please point out the offending party to one of the Swapmeet Supervisors or myself so that we can take care of it.

One final note, a pair of perscription eyeglasses were turned in at the last Swapmeet. They have light colored frames. If you know anyone who lost a pair of glasses, have them give me a call at (213) 536-2063, Monday through Friday, 8am - 5pm.

73's and see you on 26 October at 0700!!! (ed. A caution to those attending the Swapmeet!! One seller at the Swapmeet was selling "ON" and "Select" decoder boxes, apparently at many of the Southland swapmeets as well as ours. He was kicked out of our last Swapmeet and later we found out from some irate people that his circuits, PC boards or anything else he is selling don't work!! If you see anyone selling illegal decoders for any subscriber service please let a Swapmeet Supervisor know immediately and we will let the proper authorities handle the situation. Thanks to Bill Schrecengost for the info.)

Tidbits from the Jolly Little S...!

An error crept into the drawing that accompanied the article on Mobile Power by George Lee. The resistor from the Adjust terminal of the LM317T to ground should be 1600 ohms (1.6K) instead of the 16,000 ohms (16K) indicated on the diagram. It just goes to show you that it is easy to miss a period here and there.

And speaking of missing periods, yours truly is going to be a father for the first time this coming March or April (no - if I have to hold him back myself, he will not be born on April 1). I am definitely looking forward to the coming of the new harmonic, be it boy or girl. I have always wanted to figure out how soon someone can start to pick up Morse Code.

All you hot DX chasers and super contesters, here comes the CQ Worldwide DX Contests. The Phone contest is October 26th and 27th and the CW contest is November 23rd and 24th. It should be an interesting contest with the bands in such poor condition. Here's the chance to check out the new antenna or linear.

Congratulations to the members of the Monterey Park ARC and the RACES members who received a nice commendation from the City of Monterey Park for their assistance during the recent "Night Stalker" episode in Southern California. A nice copy of the commendation was printed in their newsletter 5 By 9, and signed by the Chief of Police, Jon D. Elder. Congratulations to all of you!!!

We received our Autumn Edition of the Hamster from the Cheshunt and District ARC located in Great Britain. In it is a review of a book "Secret Warfare" by Pierre Loraine, published in the UK by Orbis Publishing Ltd. It sounds like a fascinating book about the suitcase transmitters given to the Resistance and the "home stations" that had a field of Rhombics to pick up the weak signals from across the English Channel. Many sets are described and beautifully illustrated and some of the work of codebreakers is described as well. Looks like good reading - I hope we see it over here on this side of the Atlantic!

A lot of good press has been falling the way of Amateur Radio what with the Mexico City earthquake and the loss of long distance telephone service to that city and surrounding area. Good reading are the reports from some of the Club members that handled traffic to and from Mexico City.

Bill Dews is about to learn not to get the newsletter editor interested in early morning activities and then not show up himself! Bill has been missing or late to the last three breakfasts. Of course, some of those who did show up considered that more of a blessing than not!

The Digital Front

Chris Wachs, WA2KDL

The new TNC-2 will soon be sold by AEA. This is the new Terminal Node Controller (TNC) that the Tucson Amateur Packet Radio (TAPR) people just developed. It has all the level two protocol, like multi connections and will run on 12 VDC. The new revision 4.0 software for TNC-1's will be out by the end of the month, we hope! There will also be a hardware modification available to give the TNC-1 all of the capabilities of the TNC-2 and a few added enhancements the TNC-2 doesn't have.

Don't forget about the LA Packet meetings right after the TRW/ARC Swapmeet at the Dana Elementary School on Aviation Blvd near 135th Street just north of the Swapmeet site a few miles. The meeting starts at 11:00am. There is always some hardware to see during "Show and Tell" and you have the ability to have all of your questions answered by those who are in the know!

The new frequency for the digital voice net is now on 145.14 MHz (-.600), Monday nights at 8:00pm. This is the place to listen for Packet news for those of you who don't have a TNC yet.

Stay tuned here for more from the digital front next month.

DARC Spacelab Ham-In-Space Mission Details

...from the Amateur Satellite Report

During the 7-day Spacelab Mission D1 scheduled for October 1985, the science astronauts R. Furrer, DD6CF and E. Messerschmid, DG2KM from Germany and DR. Wubbo Ockels, PE1LFO, a newly licensed ham from Holland, will operate a ham radio station, located in the Spacelab on board the Space Shuttle Columbia. The call sign of this station will be DP0SL (Space Lab).

This ham activity is planned to start on mission day 3 and last until about 12 hours before landing. This ham radio activity will be focused on Europe. However, it is intended to attempt contacts also in other countries.

Calls of responding stations will be recorded on tape, evaluated after the end of the mission and confirmed with special QSL card by the DARC (German Amateur Radio Club). In times of no voice communication of the astronauts, the rig may operate as a recording beacon, i.e., an automatic CQ call will be transmitted, followed by a one minute period in which the receiver records incoming calls on tape. This cycle is automatically repeated. Calls identified on tape will also be confirmed by DARC.

It is recommended to use circular polarized antenna, adjustable in horizontal and vertical direction. The maximum velocity necessary to follow the Spacelab's orbit is approximately 1.5 degrees per second. At least for receiving, manual control of the antennas is sufficient, since only low gain antennas (gain 3dB) are required to receive the signals of the Spacelab ham radio station.

An effective radiated power (ERP) of 10 dBW is recommended for contacts with Spacelab. This means that a 70 cm transmitter with 10 watts of power output combined with a 10 dB gain antenna will be a good choice.

Table of Frequencies:

Channel 0	145.450 MHz	437.125 MHz
Channel 1	145.475 MHz	437.175 MHz
Channel 2	145.550 MHz	437.225 MHz
Channel 3	145.575 MHz	437.275 MHz
Channel 4	-	437.325 MHz
Channel 5	-	437.375 MHz

Selection of transmit and receive frequencies may be done separately. There are no dedicated frequency pairs except for Channel 3/3 (normal operation without a pile-up).

General Meeting 24 Sept 1985

Paul Lukas, N6DMV

President Walt Pearson opened the meeting. Treasurer Paul Hebert gave an account of the Club's financial condition, stating that the Club is still solvent with Swapmeet income running a little better than expected. The Christmas Banquet ticket prices were announced: \$9.00 for members and one guest, \$14.00 for non-members and additional guests. Price includes dinner and beverage, but alcoholic beverages are extra. Preparations for the TRW Family Day were discussed, with handouts, two HF stations (one mobile) and 2 Meter Packet Radio the main displays. Walt referred the membership to the back page of the Crosstalk and stated that Club elections are coming up. Officers may serve only two consecutive terms hence the offices of President, Vice-President, and Treasurer must be filled. Please examine your interest in the Club and volunteer for an office. And if you can't run for office, then be sure you vote for the person you want. The American Red Cross was looking for Amateur Radio Operators to help with the message traffic to Mexico City. Interested parties can call (213) 624-3261 and volunteer. The speaker for the meeting was Jim Cox, K7JAJ, who gave an illuminating exposé on repeaters, repeater systems and operational goodies. An excellent presentation enjoyed by all who attended. Door prize given away were: 3 pair of diagonal cutters, an electronics book, 4 LCD calculators, a bulk tape eraser, a rechargeable battery pack, a fuse puller, a wire stripper and a small speaker. 30 members attended the meeting which was adjourned at 1300 local.

Amateur Radio Aids Mexico City

A few of the TRW/ARC members with good HF stations got on the air and helped out with message traffic to Mexico City in the wake of a devastating 7.8 Richter earthquake. The few that told me that they were involved included Bob Hume, KG6B, Dale Jensen, K6ZTI and Paul Lukas, N6DMV. Dale didn't have time to get me any details but I got the impression that he had some regular (read daily) message handling duties. Bob and Paul did get short articles to me and they follow.

Bob Hume, KG6B

I handled 40 plus health and welfare messages on 20 Meter SSB following the large earthquake in Mexico. All of the messages that I handled were "All OK" in nature and it was a very moving personal experience to relay this information by telephone to USA family members. I had a problem keeping my own composure after delivering one of my first messages to a woman in Los Angeles who could only acknowledge receiving the good news by crying. Based on my experience of tuning up and down the 20 Meter SSB band and listening to all of the USA and Worldwide traffic handling to Mexico City in the days following the quake, I know that Amateur Radio has made a big contribution here. It was nice to have played a small part in it.

Paul Lukas, N6DMV

I have relayed some messages on 7 and 14 MHz from /to Los Angeles and Mexico City. It was an elevating feeling to be able to relay messages between family members here and the disaster stricken Mexico City. A big HI to the XE1's who tirelessly sent messages back and forth and calling the on the phone who were being sought by family here. They are the real heroes - some working over 24 hours uninterrupted. I was tuned in on an XE1 station when the big aftershock hit. He had to leave his swaying shack, but was back on the air in 3 minutes - reporting on the quake and resuming the traffic! Several hams in Mexico City were knocked off the air by the big aftershock due to powerline failures. I am happy to report that all of the messages that I handled were reports of "All is OK!" For one friend, I got a message through about 0030 local time but I left his home phone number at the office. I climbed into my car, drove to work, got his number and called him with the good news about 0105 local. Given the nature of the message, he and his wife did not mind the late night call. I urge all interested hams to write to the operators in Mexico who handled traffic thanking them for their invaluable service - they deserve it!

Ham Shack Boasts New 40 Meter Quad

Bob Hume, KG6B

A full sized, two element, non-rotatable 40 Meter Cubical Quad antenna has been installed at W6TRW. Presently it is pointed east, but plans have been worked out to make the pattern east/west switchable from the operators position. The following people have helped install this array:

Barry Allen, WA4TIG
Bill Dews, K6AWO
John Keller, N6JLS
Paul Herbert, KG6CR
Scott Gilmartin,
Chris Wachs, WA2KDL

The array was tuned and trimmed using a Palomar noise bridge mounted right at the driving point and an SWR meter. The array presently favors the phone band. A prudent design frequency for the array is the middle of the band of operation. This will result in an SWR of 1.0 at the design frequency and an SWR of about 2.5 at the band edges. For this array the design frequency was 7.217 MHz. The Quad loop circumference design constant then works out to be:

$$K = L * F$$

where,

L = driven element loop circumference in feet

...more Quad Antenna...

F = array design frequency in MHz
therefore,

$$K = (7.217 * 138.75)$$

$$K = 1001.4$$

This is close to the typical values carried in the literature on Quad antenna design.

For those who favor CW work around 7.0 MHz, I am considering manual or remote switching of a CW stub into both elements so that the array can be optimized for both phone and CW operation. It is easy to get at the base of the array to do this switching since the bottom of the quad is only 5 feet off the roof. Some further testing based on reflector element stub length which maximizes forward gain and front to back ratio would be interesting. I'm game if anyone would like to do that.

This antenna should be effective for working DX. You are welcome to come up to the shack and try it out. Mike Aust is planning to hook his remote controlled Icom rig to the antenna so that it can be used by Club members with a 450 MHz HT while at their own QTH.

Big Signal from Our 40 M Quad

Scott Gilmartin, WD6BNR

I had the opportunity to mess around with our newly cut 40 Meter Quad antenna these past few weeks. It seems that Bob Hume's modifications are a big success! I worked Australia and Haiti with 59 reports both transmitting and receiving. The Haiti station was working a big pile-up and I nailed him with my first attempt. The Australian took four tries but was just as sweet. I called CQ a couple of times and the result was several East Coast stations responding. My lowest signal report was 58; highest was 15dB over S9. Several stations were quite surprised I was running barefoot and lavished praise on the Quad. It was a tremendous feeling knowing that I was a sought after station on 40 Meters. The only drawback has been a consistent S7 noise level that we on the West Coast have to put up with.

From the Library

George Lee, W6IOW

What's new in the October issues of:

QST: A 902 to 144 MHz Receiver Converter (a GaAsFET front-end with a noise figure of 1.3dB and a 25dB gain for the new ham band.)

A User's Guide to AMTOR Operation

Build UHF Wattmeter (Dick Smith Electronics K-6312)

A CAT Controlled System

Product Review: Ten-Tec 2510 Model B Satellite Station

Product Review: KLM 2M-22C & 435-40CX Yagi for Oscar

IR: Computer Aided Audio Filter Design
The Fox Box (a DF tool)
Passive Audio Design: HP & BP Filters
A Portable 2M Beam

CQ: Conversion of Drake L4B for use with 3CX1200A7's

73: Build a 1296 Stripper (stripline downconverter)
Talk is cheap - a speech synthesizer

Thanks to W6IPM for his sharp eyes in catching the missing decimal on the 1.6K resistor on the Mobile Power Supply schematic in the last Crosstalk. Remember to isolate the regulator case from ground in your installation.

Thanks to KE6LB for donating "North American Radio-TV Station Guide", 3rd Edition, to the library.

We also thank N6NW for 6 more magazines from VK land.